

ABSTRACT

METHOD OF CHECKING THE HERMETICITY OF A CLOSED CAVITY OF A MICROMETRIC COMPONENT AND MICROMETRIC COMPONENT FOR THE IMPLEMENTATION OF THE SAME

In order to check the hermeticity of a closed cavity (14) of at least one micrometric component (1), said component includes a structure (5, 6, 10) made over or in one portion of a substrate (2), a cap (3) fixed to one zone of the substrate to protect the structure, and an indicator element (4, 15) whose optical or electrical properties change in the presence of a reactive fluid. The indicator element may be a copper layer (4) for an optical check or a palladium resistor (15) for an electrical check. The micrometric component (1) is placed in a container which is then hermetically closed. This container is filled with a reactive fluid under pressure, which is oxygen for the optical check and hydrogen for the electrical check. The component in the container is subjected to a reactive fluid pressure higher than 10 bars for a determined time period, and to thermal ($T > 100^\circ\text{C}$) or optical ($\lambda < 500 \text{ nm}$) activation. After this time period, an optical or electrical check of the indicator element (4, 15) determines the hermeticity of said cavity (14).

Figures 1 and 7